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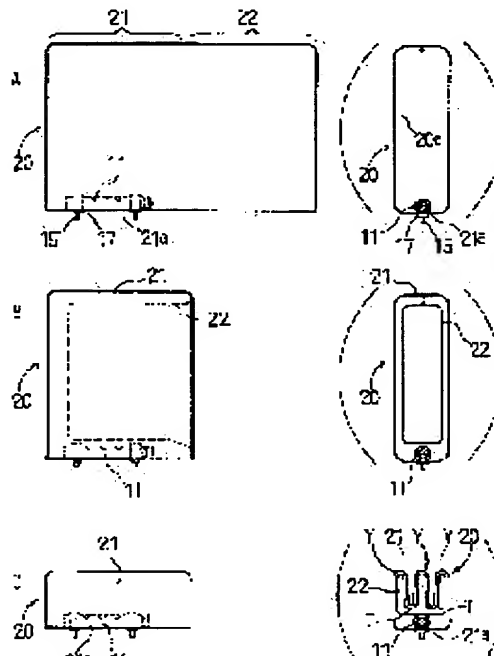
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(54) AIR BAG FOR SIDE COLLISION

(57)Abstract:

PROBLEM TO BE SOLVED: To enable rapid inflation of a body part even if an extension part continues to the body part in parallel with a mounting and fixing part.

SOLUTION: An air bag 20 for side collision is folded close to a mounting and fixing part 21a and made in the inflated shape of a bag comprising a body part 21 continuing to the mounting and fixing part 21a in the direction almost crossing the mounting and fixing part 21a, and an extension part 22 continuing to the body part 21 along the mounting and fixing part 21a. In the air bag 20 for side collision, the extension part 22 is incorporated into the body part 21, and the body part 21 incorporating the extension part 22 is folded to the side of the mounting and fixing part 21a together with the extension part 22.



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CLAIMS

[Claim(s)]

[Claim 1] The air bag for side ** which is an air bag for side ** which is characterized by providing the following, and which was made into the bag configuration, and is carried out [that this aforementioned soma which put in the aforementioned installation section is folded up with the aforementioned installation section at the aforementioned attachment fixed part grade side, and] as the feature while being put into the aforementioned installation section inside this aforementioned soma. This soma which stands in a row at the aforementioned attachment fixed part grade towards being folded up near attachment fixed part grade and carrying out the abbreviation rectangular cross of the expansion configuration with the aforementioned attachment fixed part grade. The installation section which stands in a row along with the aforementioned attachment fixed part grade to this soma of this.

[Claim 2] The air bag for side ** which is an air bag for side ** according to claim 1, and is characterized by arranging the vent hole in the aforementioned installation section.

[Claim 3] The air bag for side ** which is an air bag for side ** according to claim 2, and is characterized by for the aforementioned vent hole stopping the suture of the aforementioned installation section partially, and forming it.

[Claim 4] The air bag for side ** which is an air bag for side ** according to claim 2, and is characterized by for the aforementioned vent hole drilling a part of aforementioned installation section, and forming it.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the air bag for side ** arranged between the in-the-car wall of vehicles, and crew at the time of expansion.

[0002]

[Description of the Prior Art] Conventionally, in the air bag for side **, the configuration at the time of expansion is made into the thin rectangular parallelepiped configuration, and it was attached in the case of the air bag equipment for side ** etc. by having made the end side side of an expansion configuration into attachment fixed part grade, and was folded up near attachment fixed part grade.

[0003] And with the inflator of the cylinder type arranged near the attachment fixed part grade etc., when the gas for expansion flowed into the air bag, the air bag was projecting and expanding from the state currently folded up near attachment fixed part grade in the direction which carries out an abbreviation rectangular cross with attachment fixed part grade.

[0004] However, in the air bag for side **, when you are going to make it expand in the big range along with attachment fixed part grade, the need of preparing the installation section extended as an expansion configuration to this soma to the attachment fixed part grade and abbreviation parallel other than this soma which projects in the abbreviation rectangular cross direction at attachment fixed part grade arises.

[0005] However, the installation section parallel to the attachment fixed part grade other than this soma is prepared, and if the usual bellows chip box etc. is how to fold up and constitutes the air bag for side **, both time will require expansion with this soma and the installation section till the completion of expansion.

[0006] this invention aims at offering the passenger-side air bag which can expand this soma quickly, even if it solves the above-mentioned technical problem and the installation section stands in a row in attachment fixed part grade and parallel to this soma.

[0007]

[Means for Solving the Problem] This soma which stands in a row at the aforementioned attachment fixed part grade towards the air bag for side ** concerning this invention being folded up near attachment fixed part grade, and carrying out the abbreviation rectangular cross of the expansion configuration with the aforementioned attachment fixed part grade, While being the air bag for side ** made into the bag configuration which comes to have the installation section which stands in a row along with the aforementioned attachment fixed part grade to this soma of this and being put into the aforementioned installation section inside this aforementioned soma This aforementioned soma which put in the aforementioned installation section is characterized by being folded up with the aforementioned installation section at the aforementioned attachment fixed part grade side.

[0008]

[Effect of the Invention] Since this soma into which it put the installation section while being put into the installation section inside this soma is folded up with the installation section at the attachment fixed part grade side, this soma makes expansion first completed in the state where the installation section hardly expands, by the air bag for side ** concerning this invention at the time of expansion. And the installation section projects from this soma and the installation section makes expansion completed with elevation of the internal pressure of this soma.

[0009] Therefore, in the air bag for side ** concerning this invention, even if the parallel installation section is connected with attachment fixed part grade in this soma, this soma can be expanded quickly. Therefore, after restraining crew's predetermined part certainly by this soma, other parts of crew can be accurately restrained by the installation section which made expansion complete after the completion of expansion of this soma.

[0010] Furthermore, since air does not flow out until this soma completes expansion when a vent hole is formed in the installation section, while there are few amounts of losses of air than the case where the vent hole is formed in this soma, and the capacity of an inflator is small and ends, the further shortening of expansion time is attained. Moreover, since the pressure of the installation section increases when this soma is inserted into crew and a door at the time of air bag expansion, a protection performance improves further.

[0011]

[Embodiments of the Invention] Hereafter, 1 operation gestalt of this invention is explained based on a drawing.

[0012] As the air bag 20 of an operation gestalt is shown in drawing 12 and 3, it is used for the air bag equipment 10 for side **, and air bag equipment 10 is arranged at the left lateral of a seat back 3 which becomes the door side of vehicles in the sheet 1 equipped with the seat 2 and seat back 3 of vehicles.

[0013] Receipt crevice 4a prolonged in the abbreviation vertical direction on the main part 4 which consists of urethane material etc. is formed in the left lateral of a seat back 3, and the frame 5 prolonged in the

abbreviation vertical direction so that the bottom may be pushed down back is arranged in the field by the side of the back of the vehicles of receipt crevice 4a. Mounting hole 5a is formed in two predetermined places of a frame 5. Moreover, the epidermis 6 which consists of an ornament cloth etc. is arranged in the outside-surface side of a seat back 3. Blind stitch 6a which comes to suture both the edges of the cut epidermis 6 with a suture 7 beforehand is formed in the part which becomes this epidermis 6 the front-face side of receipt crevice 4a so that it may be easy to fracture at the time of expansion of the air bag 20 mentioned later.

[0014] Air bag equipment 10 is equipped with an inflator 11, an air bag 20, and covering 19, and is constituted.

[0015] The inflator 11 is arranged at the attachment fixed part grade 21a side by the side of the rear face in an air bag 20 as a cylinder type which equipped the peripheral surface with two or more gas delivery 11a. The lead wire 12 for making the signal for the generation of gas input into the soffit of an inflator 11 is connected, and lead wire 12 inserts in the vent hole 23 of an air bag 20, and is connected to the connector which flows in an air bag operation circuit and which is not illustrated.

[0016] Up and down, attachment fixation of the two mounting brackets 13 is carried out, and as the shape of a cylinder made from sheet metal, each mounting bracket 13 is equipped with the sleeve 14 made to weld so that it may make radial project a bolt 15, and the cushioning material 16 which fixed to the inner skin of a sleeve 14, and is constituted by the inflator 11. The bore of a sleeve 14 is formed more greatly than the outer diameter of an inflator 11, attachment fixation in the inflator 11 of these mounting brackets 13 makes a cushioning material 16 intervene, carries out sheathing of the sleeve 14 to an inflator 11, and it is carrying out in total so that the diameter of a sleeve 14 may be made to reduce partially.

[0017] The bolt 15 of each mounting bracket 13 by which attachment fixation was carried out at the inflator 11 inserts in mounting hole 21b (refer to drawing 3) of an air bag 20, inserts in mounting hole 5a of a frame 5 through the spring nut 17 and bracket 19b of covering 19, is stopped nut 8 and carried out. And attachment fixation of the air bag equipment 10 will be carried out by this nut 8 stop at a seat back 3.

[0018] Covering 19 is equipped with bracket 19b crooked in the rectangular direction in the side of the seat-back main part 4 from the edge of main part 19a of the tabular of a wrap rectangle, and main part 19a as a product made of synthetic resin, and two mounting hole 19c for making each bolt 15 insert in, respectively is formed in bracket 19b.

[0019] As shown in A of the two-dot chain line and drawing 4 of drawing 12, an air bag 20 the configuration at the time of expansion This soma 21 which is considering as the abbreviation rectangular plate-like saccate, is made to arrange attachment fixed part grade 21a by which an inflator 11 is arranged to a part of back end side, and is prolonged in the abbreviation rectangular cross direction from attachment fixed part grade 21a. It has the installation section 22 which stands in a row in attachment fixed part grade 21a and abbreviation parallel, and consists of these somata 21.

[0020] Mounting hole 21b (refer to drawing 3) in which the bolt 15 of each mounting bracket 13 is made to insert is formed in attachment fixed part grade 21a of this soma 21, and the slit-like vent hole 23 (refer to drawing 3) is formed in attachment fixed part grade 21a.

[0021] In the case of the operation gestalt, this soma 21, abbreviation, etc. spread, and are constituted and the installation section 22 makes capacity this soma 21 and the saccate of abbreviation symmetrical type except for mounting hole 21b or the vent hole 23.

[0022] Manufacture of this air bag 20 forms mounting hole 21b and a vent hole 23 in the center of cloth material 20a which consists of textile fabrics, such as polyester of the abbreviation rectangle configuration of one sheet, and a polyamide, it is the center in which mounting hole 21b etc. was prepared, and if it folds in half so that ends may be piled up, and both peripheries are sutured and it turns over using the part of a vent hole 23, it can manufacture them.

[0023] In addition, an air bag 20 may prepare the two cloth material of an isomorphous abbreviation rectangle configuration, and may suture, turn over and manufacture both the peripheries of the perimeter of two cloth material. In this case, mounting hole 21b and a vent hole 23 will stop the suture between cloth material partially, and will form it.

[0024] First, explanation of folding of this air bag 20 inserts beforehand the inflator 11 which carried out attachment fixation of the mounting bracket 13 into the air bag 20 from the vent hole 23, as shown in A of drawing 4. In addition, the bolt 15 of each mounting bracket 13 makes each bolt 15 attach the spring nut 17 outside, and presses down the periphery of each mounting hole 21b with the spring nut 17 in it while making it project from mounting hole 21b.

[0025] Subsequently, as shown in B of drawing 4, the installation section 22 is put in inside this soma 21.

[0026] Then, if the KAKUTASU chip box of this soma 21 which put in the installation section 22 is carried out and it is folded up to the attachment fixed part grade 21a side with the installation section 22 as shown in C of drawing 4, fold-up work can be made to complete.

[0027] In addition, although one step of KAKUTASU chip box was illustrated in C of drawing 24 in order to make a drawing simple, according to the capacity to fold up, two or more steps of KAKUTASU chip boxes (for example, in two steps of KAKUTASU chip boxes, the fold Y of a mountain chip box and the fold T of a valley chip box increase two [at a time] from the case of illustration, and five pieces and Fold T become [Fold Y] four pieces) will be performed in fact.

[0028] Moreover, in order to prevent the chip box collapse after folding up, as for the air bag 20 by which the operation gestalt was folded up, it is desirable to cover with the film 18 with the thin thermal-contraction film which can be fractured. The bolt 15 of each mounting bracket 13 is made to project from a film 18 at this time.

[0029] And if the air bag 20 and inflator 11 which were folded up in this way make the bolt 15 of each mounting bracket 13 insert in each mounting hole 19c of bracket 19b, and each mounting hole 5a of a frame 5 and a nut 8

is made to screw in each bolt 15, they can be attached in a frame 5 as air bag equipment 10 equipped with an air bag 20, and inflator 11 and covering 19.

[0030] In addition, what is necessary is to carry out sheathing of the epidermis 6 to the seat-back main part 4, to equip vehicles with the completed sheet 1, and just to connect the terminal of lead wire 12 to a predetermined connector, after attaching air bag equipment 10 in a frame 5.

[0031] and with the air bag equipment 10 of an operation gestalt If the electrical signal for the generation of gas is inputted into an inflator 11 through lead wire 12 after equipping the vehicles of a sheet 1 An inflator 11 makes gas breathed out from gas delivery 11a, and while an air bag 20 fractures a film 18 and blind stitch 6a of epidermis 6, main part 19a of covering 19 will be made to open, and it will expand greatly ahead.

[0032] Since this soma 21 which put in the installation section 22 is folded up in the KAKUTASU chip box with the installation section 22 at the attachment fixed part grade 21a side while being put into the installation section 22 inside this soma 21 by the air bag 20 of an operation gestalt in that case, this soma 21 makes expansion first, completed in the state where the installation section 22 hardly expands, at the time of expansion, as the two-dot chain line of drawing 12 shows. And the installation section 22 projects from this soma 21, and the installation section 22 makes expansion completed with elevation of the internal pressure of this soma 21, as the tripartite chain line of drawing 1 shows.

[0033] Therefore, in the air bag 20 for side ** of an operation gestalt, even if the parallel installation section 22 is connected with attachment fixed part grade 21a in this soma 21, this soma 21 can be expanded quickly. Therefore, after restraining crew's predetermined part (for example, thorax) certainly by this soma 21, other parts (it is a thorax when a head or this soma 21 restrains the lumbar part) of crew can be accurately restrained by the installation section 22 which made expansion complete after the completion for expansion of this soma 21.

[0034] In addition, although the operation gestalt showed the case where carried out the KAKUTASU chip box of this soma 21 which put in the installation section 22, and it folded up to the attachment fixed part grade 21a side, the bellows chip box of this soma 21 which put in the installation section is carried out, and you may make it fold up to the attachment fixed part grade 21a side, as shown in C' of drawing 5. Moreover, as shown in D of drawing 6, you may carry out a roll chip box to a change of a bellows chip box.

[0035] Moreover, like the air bag 30 shown in A of drawing 6, although the case where the installation section 22 of an air bag 20 stood in a row in this one soma 21 was shown, you may constitute from an operation gestalt so that the installation section 32 may be made to stand in a row on both sides of this soma 31.

[0036] First, folding in this case inserts the inflator 11 which carried out attachment fixation of the mounting bracket 13 into the air bag 30 from the vent hole (drawing sign ellipsis) like A of drawing 4, as shown in A of drawing 6. Of course, the bolt 15 of each mounting bracket 13 makes each bolt 15 attach the spring nut 17 outside, and presses down each mounting hole periphery with the spring nut 17 in it while making it project from the mounting hole (drawing sign ellipsis) prepared in attachment fixed part grade 31a.

[0037] Subsequently, as shown in B-C of drawing 6, the installation section 32 is put in inside this soma 31 one by one.

[0038] And what is necessary is to carry out the roll chip box of this soma 31 which put in the installation section 32-32, and just to make it fold up to the attachment fixed part grade 31a side, as shown in D of drawing 6.

[0039] Furthermore, although the air bag 20 of an operation gestalt showed what used as this soma 21 and the symmetrical form of abbreviation isomorphism the installation section 22 which stands in a row from this soma 21, you may form in the configuration (configuration where the part of attachment fixed part grade 21a was excluded from this soma 21 when putting in another way) made into small capacity from this soma 21 like the installation section 32 for one shown in A of drawing 6.

[0040] Although each operation form showed further again what carried out insertion arrangement of the inflator 11 in the air bag 20-30, a gas-stream entrance may be established in the attachment fixed part grade 21a and 31a side, and an inflator may be arranged on the outside of an air bag 20-30. In this case, a bolt stop, a rivet stop, etc. should just carry out the periphery of a gas-stream entrance to the frame 5 of a sheet 1, the case of the predetermined air bag equipment for side **, etc. as attachment fixed part grade 21a and 31a of an air bag 20-30 which prepared two or more mounting holes.

[0041] Moreover, as shown in drawing 78, you may form a vent hole 23 in the installation section 22 of an air bag 20-30 (32). What was drilled in the installation section 22 (32), the thing which stopped the suture of the installation section 22 (32) partially, and was formed are arbitration like the operation form of the above-mentioned [the configuration of a vent hole 23]. The vent hole 23 formed in the installation section 22 (32) is in the state which put the installation section 22 (32) into this soma 21 (31), and is used as the valve mechanism of a self-seal, and air flows out for the first time by expansion of the installation section. Since air does not flow out until expansion of this soma is completed when a vent hole is formed in the installation section, while there are few amounts of losses of air, and the capacity of an inflator is small and ends, the further shortening of expansion time is attained. Moreover, since the pressure of the installation section increases when this soma is inserted into crew and a door at the time of air bag expansion, a protection performance improves further.

[0042] In addition, the path of a vent hole may usually be about 10-30mm. Although that in which one vent hole was formed is indicated in the example of drawing, what is formed is usable.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the side elevation showing the use mode of the air bag of 1 operation gestalt of this invention.

[Drawing 2] It is the II-II expanded sectional view of drawing 1 .

[Drawing 3] It is the side elevation of this operation gestalt.

[Drawing 4] It is drawing showing the folding process of this operation gestalt.

[Drawing 5] It is drawing showing how to fold up everything but this soma which put in the installation section in this operation gestalt.

[Drawing 6] It is drawing showing the folding process of other operation gestalten of this invention.

[Drawing 7] It is the plan showing this soma which put in the installation section of the air bag of the operation gestalt of further others of this invention.

[Drawing 8] It is the plan showing this soma which put in the installation section of the air bag of the operation gestalt of further others of this invention.

[Description of Notations]

20-30 -- Air bag

21-31 -- This soma,

21aand31a -- Attachment fixed part grade,

22-32 -- Installation section.

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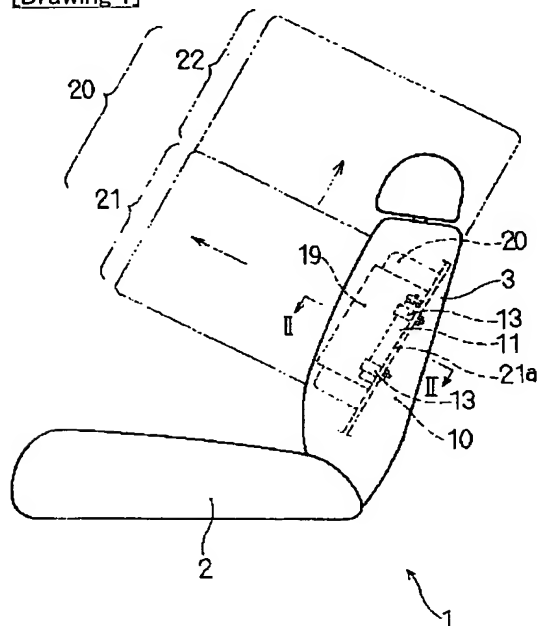
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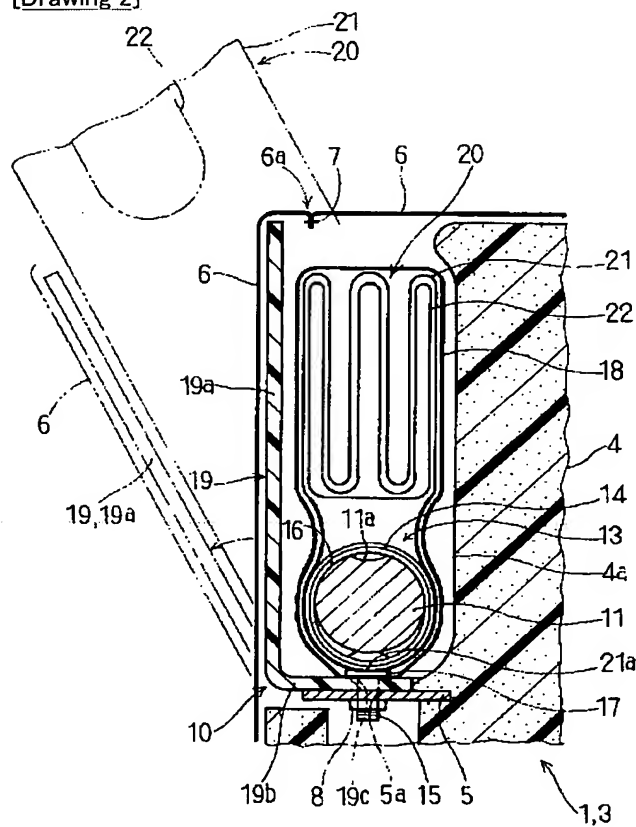
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DRAWINGS

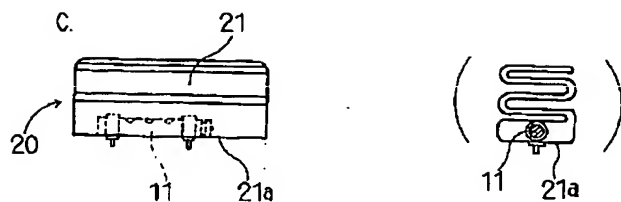
[Drawing 1]



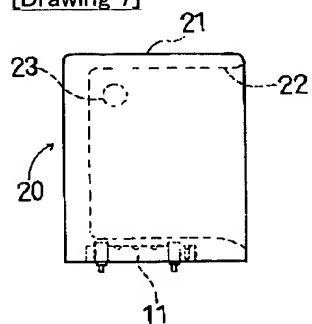
[Drawing 2]



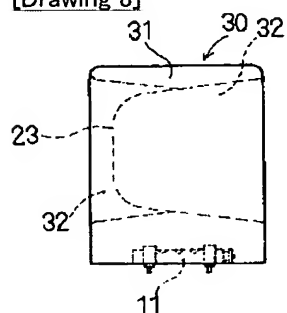
[Drawing 5]



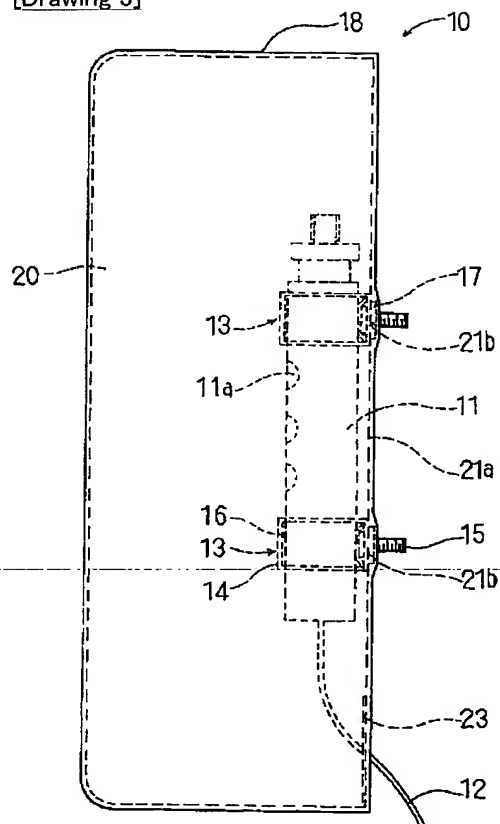
[Drawing 7]



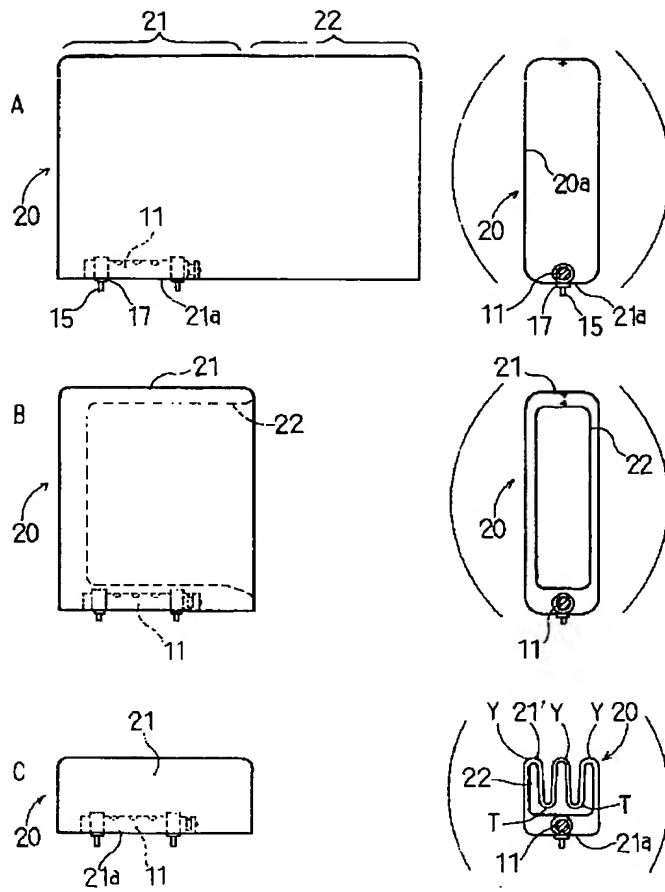
[Drawing 8]



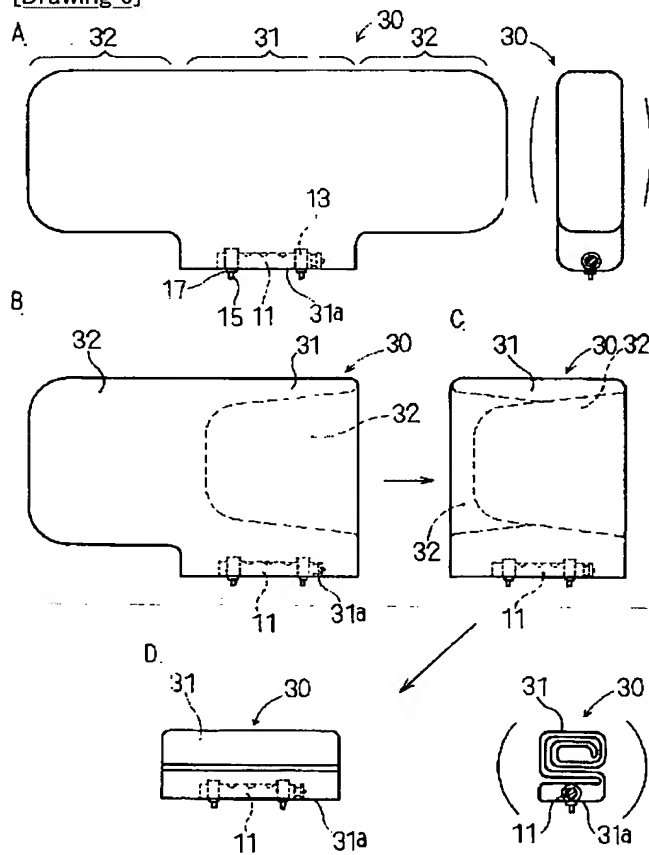
[Drawing 3]



[Drawing 4]



[Drawing 6]



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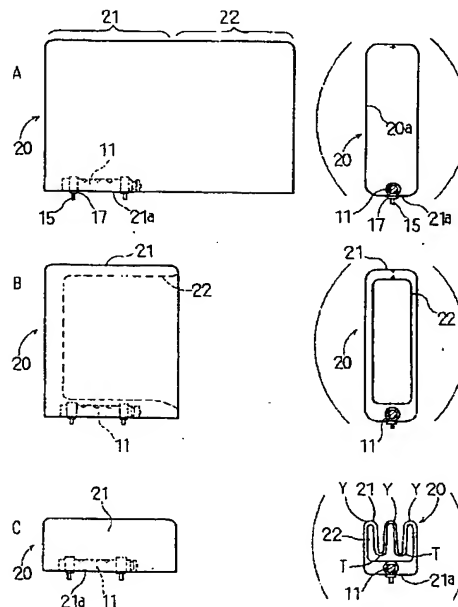
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(54) 【発明の名称】 側突用エアバッグ

(57) 【要約】

【課題】 本体部に対して取付固定部位と平行に延設部が連なっている、本体部を素早く膨張させることができる助手席用エアバッグを提供すること。

【解決手段】 側突用エアバッグ20は、取付固定部位21a付近に折り畳まれ、膨張形状を、取付固定部位21aと略直交する方向で取付固定部位21aに連なる本体部21と、本体部21に対して取付固定部位21aに沿って連なる延設部22と、を備えてなる袋形状としている。側突用エアバッグ20は、延設部22が、本体部21の内側に入れ込まれるとともに、延設部22を入れ込んだ本体部21が、延設部22とともに、取付固定部位21a側に折り畳まれている。



【特許請求の範囲】

【請求項1】 取付固定部位付近に折り畳まれ、膨張形状を、前記取付固定部位と略直交する方向で前記取付固定部位に連なる本体部と、該本体部に対して前記取付固定部位に沿って連なる延設部と、を備えてなる袋形状とした側突用エアバッグであって、前記延設部が、前記本体部の内側に入れ込まれるとともに、前記延設部を入れ込んだ前記本体部が、前記延設部とともに、前記取付固定部位側に折り畳まれていることを特徴とする側突用エアバッグ。

【請求項2】 請求項1に記載の側突用エアバッグであって、前記延設部にベントホールが配設されていることを特徴とする側突用エアバッグ。

【請求項3】 請求項2に記載の側突用エアバッグであって、前記ベントホールが、前記延設部の縫合を部分的に止めて形成されていることを特徴とする側突用エアバッグ。

【請求項4】 請求項2に記載の側突用エアバッグであって、前記ベントホールが、前記延設部の一部を穿設して形成されていることを特徴とする側突用エアバッグ。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、膨張時、車両の車内壁と乗員との間に配置される側突用エアバッグに関する。

【0002】

【従来の技術とその課題】従来、側突用エアバッグでは、膨張時の形状を薄い直方体形状としており、膨張形状の一端面側を取付固定部位として、側突用エアバッグ装置のケース等に取り付けられ、また、取付固定部位付近に折り畳まれていた。

【0003】そして、取付固定部位近傍に配置されるシリンドライプのインフレーター等により、膨張用ガスがエアバッグ内へ流入すると、エアバッグは、取付固定部位付近に折り畳まれていた状態から、取付固定部位と略直交する方向に突出して、膨張していた。

【0004】しかし、側突用エアバッグにおいて、取付固定部位に沿って大きな範囲で膨張させようとする場合には、膨張形状として、取付固定部位に略直交方向に突出する本体部の他に、本体部から取付固定部位と略平行に伸びる延設部を設ける必要が生ずる。

【0005】しかしながら、本体部の他に、取付固定部位と平行な延設部を設けて、通常の蛇腹折り等の折り畳み方で側突用エアバッグを構成すると、本体部と延設部との膨張が、膨張完了まで、共に時間がかかってしまう。

【0006】本発明は、上記課題を解決するもので、本体部に対して取付固定部位と平行に延設部が連なっている、本体部を素早く膨張させることができる助手席用エアバッグを提供することを目的とする。

【0007】

【課題を解決するための手段】本発明に係る側突用エアバッグは、取付固定部位付近に折り畳まれ、膨張形状を、前記取付固定部位と略直交する方向で前記取付固定部位に連なる本体部と、該本体部に対して前記取付固定部位に沿って連なる延設部と、を備えてなる袋形状とした側突用エアバッグであって、前記延設部が、前記本体部の内側に入れ込まれるとともに、前記延設部を入れ込んだ前記本体部が、前記延設部とともに、前記取付固定部位側に折り畳まれていることを特徴とする。

【0008】

【発明の効果】本発明に係る側突用エアバッグでは、延設部が、本体部の内側に入れ込まれるとともに、延設部を入れ込んだ本体部が、延設部とともに、取付固定部位側に折り畳まれているため、膨張時、まず、延設部が殆ど膨張しない状態で、本体部が膨張を完了させることとなる。そして、本体部の内圧の上昇に伴ない、延設部が本体部から突出して、延設部が膨張を完了させることとなる。

【0009】したがって、本発明に係る側突用エアバッグでは、本体部に取付固定部位と平行な延設部が連なっている、本体部を素早く膨張させることができる。そのため、乗員の所定部位を本体部で確実に拘束した後、本体部の膨張完了後に膨張を完了させた延設部により、乗員の他の部位を適確に拘束することができることとなる。

【0010】さらに、ベントホールを延設部に形成した場合は、本体部が膨張を完了するまで空気が流出することがないため、本体部にベントホールが形成されている場合よりも、空気の損失量が少なく、インフレーターの容量が小さくてすむとともに、膨張時間のさらなる短縮が可能となる。また、エアバッグ展開時に本体部が乗員とドアとに挟まれた場合、延設部の圧力が増加するため、保護性能がさらに向上する。

【0011】

【発明の実施の形態】以下、本発明の一実施形態を図面に基いて説明する。

【0012】実施形態のエアバッグ20は、図1・2・3に示すように、側突用のエアバッグ装置10に使用されるものであり、エアバッグ装置10は、車両の座部2とシートバック3とを備えたシート1において、車両のドア側となるシートバック3の左側面に配置されている。

【0013】シートバック3の左側面には、ウレタン材等からなる本体4に、略上下方向に延びる収納凹部4aが形成され、収納凹部4aの車両の後方側の面には、上側を後方へ倒すように略上下方向に延びるフレーム5が配設されている。フレーム5の所定の2箇所には、取付孔5aが形成されている。また、シートバック3の外表面側には、装飾布等からなる表皮6が配設されている。

この表皮6には、収納凹部4aの前面側となる部位に、後述するエアバッグ20の膨張時に破断し易いように、予め、切断された表皮6の端部相互を縫合糸7で縫合してなる縫目6aが形成されている。

【0014】エアバッグ装置10は、インフレーター11、エアバッグ20、及び、カバー19、を備えて構成されている。

【0015】インフレーター11は、周面に複数のガス吐出口11aを備えたシリンダタイプとして、エアバッグ20内の後面側における取付固定部位21a側に配置されている。インフレーター11の下端には、ガス発生用の信号を入力させるためのリード線12が結線され、リード線12は、エアバッグ20のベントホール23を挿通して、エアバッグ作動回路に導通する図示しないコネクタに接続されている。

【0016】インフレーター11には、上下に、2つの取付ブラケット13が取付固定されており、各取付ブラケット13は、板金製の円筒状として、ボルト15を半径方向に突出させるように溶接させたスリーブ14と、スリーブ14の内周面に固着されたクッション材16と、を備えて構成されている。これらの取付ブラケット13のインフレーター11への取付固定は、スリーブ14の内径がインフレーター11の外径より大きく形成されており、クッション材16を介在させてスリーブ14をインフレーター11に外装し、スリーブ14を部分的に縮径させるようにかしめて、行なっている。

【0017】インフレーター11に取付固定された各取付ブラケット13のボルト15は、エアバッグ20の取付孔21b（図3参照）を挿通し、スプリングナット17とカバー19のブラケット19bとを経て、フレーム5の取付孔5aを挿通し、ナット8止めされている。そして、このナット8止めにより、エアバッグ装置10がシートバック3に取付固定されることとなる。

【0018】カバー19は、合成樹脂製として、シートバック本体4の側面を覆う長方形の板状の本体19aと、本体19aの端部から直交方向に屈曲するブラケット19bと、を備え、ブラケット19bには、各ボルト15をそれぞれ挿通させるための2つの取付孔19cが形成されている。

【0019】エアバッグ20は、膨張時の形状を、図1・2の二点鎖線・図4のAに示すように、略長方形板状の袋状としており、インフレーター11の配置される取付固定部位21aを後端面の一部に配置させ、取付固定部位21aから略直交方向に延びる本体部21と、本体部21から取付固定部位21aと略平行に連なる延設部22と、を備えて構成されている。

【0020】本体部21の取付固定部位21aには、各取付ブラケット13のボルト15を挿通させる取付孔21b（図3参照）が形成され、また、取付固定部位21aには、スリット状のベントホール23（図3参照）が

形成されている。

【0021】延設部22は、実施形態の場合、容積を本体部21と略等しく構成され、取付孔21bやベントホール23を除いて、本体部21と略対称形の袋状としている。

【0022】このエアバッグ20の製造は、一枚の略長方形形状のポリエステルやポリアミド等の織布からなる布材20aの中央に、取付孔21bとベントホール23とを形成し、取付孔21b等を設けた中央で、両端を重ねるように二つ折りして、周縁相互を縫合し、ベントホール23の部位を利用して、裏返せば、製造することができる。

【0023】なお、エアバッグ20は、同形の略長方形形状の2枚の布材を準備し、2枚の布材の全周の周縁相互を縫合し、裏返して製造しても良い。この場合、取付孔21bやベントホール23は、布材相互の縫合を部分的に止めて形成することとなる。

【0024】このエアバッグ20の折り畳みについて説明すると、まず、図4のAに示すように、予め、取付ブラケット13を取付固定したインフレーター11を、ベントホール23からエアバッグ20内に挿入しておく。なお、各取付ブラケット13のボルト15は、取付孔21bから突出させておくとともに、各ボルト15には、スプリングナット17を外嵌させ、各取付孔21bの周縁をスプリングナット17で押えておく。

【0025】ついで、図4のBに示すように、延設部22を、本体部21の内側に入れ込む。

【0026】その後、図4のCに示すように、延設部22を入れ込んだ本体部21を、延設部22とともに、カクタス折りして、取付固定部位21a側に折り畳めば、折り畳み作業を完了させることができる。

【0027】なお、図2・4のCでは、図面を簡略にするために、1段のカクタス折りを図示したが、実際には、折り畳む容積に応じて、複数段のカクタス折り（例えば、2段のカクタス折りでは、山折りの折目Yと谷折りの折目Tとが、図示の場合より、2つずつ増えて、折目Yが5個、折目Tが4個となる）を行なうこととなる。

【0028】また、実施形態の折り畳まれたエアバッグ20は、折り畳んだ後の折り崩れを防止するために、破断可能な熱収縮フィルム等の薄いフィルム18により、覆うことが望ましい。この時、各取付ブラケット13のボルト15は、フィルム18から突出させておく。

【0029】そして、このように折り畳んだエアバッグ20やインフレーター11は、各取付ブラケット13のボルト15を、ブラケット19bの各取付孔19cとフレーム5の各取付孔5aとに挿通させて、各ボルト15にナット8を螺合させれば、エアバッグ20、インフレーター11・カバー19を備えたエアバッグ装置10として、フレーム5に取り付けることができる。

【0030】なお、エアバッグ装置10をフレーム5に取り付けた後は、シートバック本体4に表皮6を外装し、完成したシート1を車両に装着し、リード線12の端末を所定のコネクタに接続させれば良い。

【0031】そして、実施形態のエアバッグ装置10では、シート1の車両への装着後、リード線12を介して、インフレーター11にガス発生用の電気信号が入力されたならば、インフレーター11が、ガス吐出口11aからガスを吐出させることとなり、エアバッグ20は、フィルム18と表皮6の縫目6aとを破断するとともに、カバー19の本体19aを開かせて、前方に大きく膨張することとなる。

【0032】その際、実施形態のエアバッグ20では、延設部22が、本体部21の内側に入れ込まれるとともに、延設部22を入れ込んだ本体部21が、延設部22とともに、取付固定部位21a側にカクタス折りで折り畳まれているため、膨張時、まず、図1・2の二点鎖線で示すように、延設部22が殆ど膨張しない状態で、本体部21が膨張を完了させることとなる。そして、本体部21の内圧の上昇に伴ない、延設部22が本体部21から突出して、図1の三点鎖線で示すように、延設部22が膨張を完了させることとなる。

【0033】したがって、実施形態の側突用エアバッグ20では、本体部21に取付固定部位21aと平行な延設部22が連なっている、本体部21を素早く膨張させることができる。そのため、乗員の所定部位（例えば胸部）を本体部21で確実に拘束した後、本体部21の膨張用完了後に膨張を完了させた延設部22により、乗員の他の部位（例えば頭部、あるいは、本体部21が腰部を拘束する場合には胸部）を適確に拘束することができることとなる。

【0034】なお、実施形態では、延設部22を入れ込んだ本体部21をカクタス折りして、取付固定部位21a側に折り畳んだ場合を示したが、図5のCに示すように、延設部を入れ込んだ本体部21を蛇腹折りして、取付固定部位21a側に折り畳むようにしても良い。また、蛇腹折りの代わりに、図6のDに示すように、ロール折りしても良い。

【0035】また、実施形態では、エアバッグ20の延設部22が本体部21に一つ連なる場合を示したが、図6のAに示すエアバッグ30のように、本体部31の両側に延設部32を連ならせるように構成しても良い。

【0036】この場合の折り畳みは、まず、図6のAに示すように、図4のAと同様に、取付ブラケット13を取付固定したインフレーター11を、ベントホール（図符号省略）からエアバッグ30内に挿入しておく。勿論、各取付ブラケット13のボルト15は、取付固定部位31aに設けた取付孔（図符号省略）から突出させておくとともに、各ボルト15には、スプリングナット17を外嵌させて、各取付孔周縁をスプリングナット17

で押えておく。

【0037】ついで、図6のB・Cに示すように、順次、延設部32を本体部31の内側に入れ込む。

【0038】そして、図6のDに示すように、延設部32・32を入れ込んだ本体部31をロール折りして、取付固定部位31a側に折り畳むようにすれば良い。

【0039】さらに、実施形態のエアバッグ20では、本体部21から連なる延設部22を、本体部21と略同形の対称形としたものを示したが、図6のAに示す1つ分の延設部32のように、本体部21より小容積とした形状（換言すれば、本体部21から取付固定部位21aの部位を省いた形状）に形成しても良い。

【0040】さらにまた、各実施形態では、エアバッグ20・30内にインフレーター11を挿入配置させたものを示したが、取付固定部位21a・31a側に、ガス流入口を設けて、エアバッグ20・30の外側にインフレーターを配置させても良い。この場合、ガス流入口の周縁を、複数の取付孔を設けたエアバッグ20・30の取付固定部位21a・31aとして、シート1のフレーム5や所定の側突用エアバッグ装置のケース等に対して、ボルト止めやリベット止め等すれば良い。

【0041】また、図7・8に示すように、エアバッグ20・30の延設部22（32）にベントホール23を形成しても良い。ベントホール23の形状は、前述の実施形態と同様、延設部22（32）に穿設したものや、延設部22（32）の縫合を部分的に止めて形成されたもの等任意である。延設部22（32）に形成されたベントホール23は、延設部22（32）を本体部21（31）に入れ込んだ状態で、自己シールのバルブ機構とされており、延設部の膨張によって初めて空気が流出する。延設部にベントホールを形成した場合、本体部の膨張が完了するまで空気が流出することがないため、空気の損失量が少なく、インフレーターの内容量が小さくてすむとともに、膨張時間のさらなる短縮が可能となる。また、エアバッグ展開時に本体部が乗員とドアとに挟まれた場合、延設部の圧力が増加するため、保護性能がさらに向上する。

【0042】なお、ベントホールの径は、通常10～30mm程度とする。図例では、ベントホールが1個形成されたものが開示されているが、複数個形成されているものも使用可能である。

【図面の簡単な説明】

【図1】本発明の一実施形態のエアバッグの使用態様を示す側面図である。

【図2】図1のII-II拡大断面図である。

【図3】同実施形態の側面図である。

【図4】同実施形態の折り畳み工程を示す図である。

【図5】同実施形態における延設部を入れ込んだ本体部の他の折り畳み方法を示す図である。

【図6】本発明の他の実施形態の折り畳み工程を示す図

である。

【図7】本発明のさらに他の実施形態のエアバッグの延設部を入れ込んだ本体部を示す平面図である。

【図8】本発明のさらに他の実施形態のエアバッグの延設部を入れ込んだ本体部を示す平面図である。

*【符号の説明】

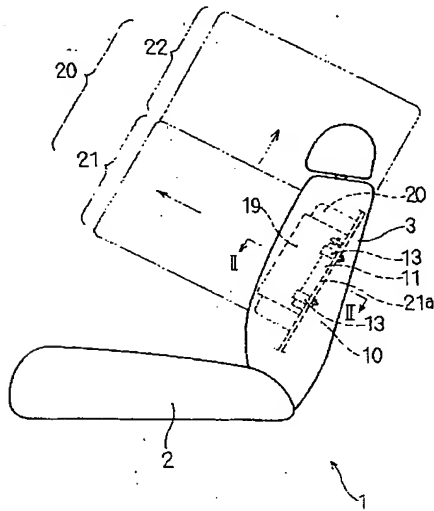
20・30…エアバッグ、

21・31…本体部、

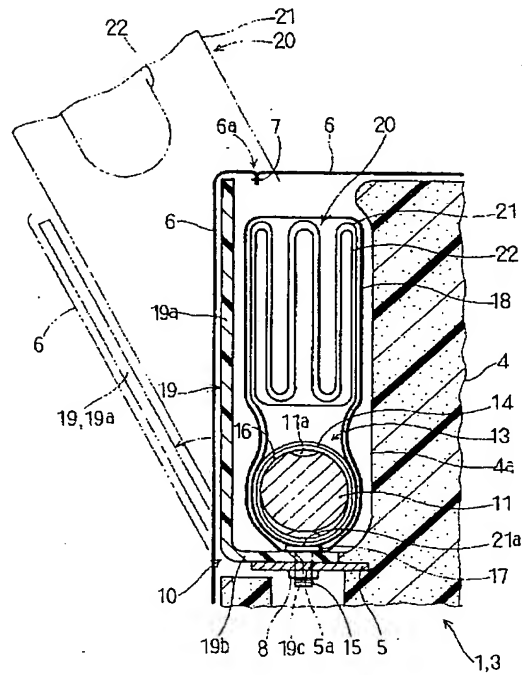
21a・31a…取付固定部位、

* 22・32…延設部。

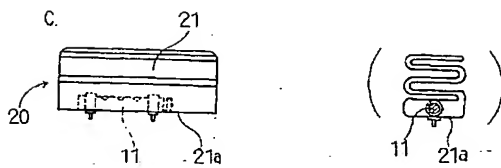
【図1】



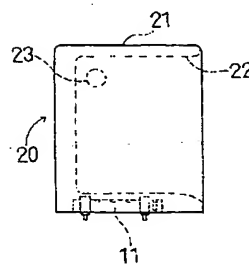
【図2】



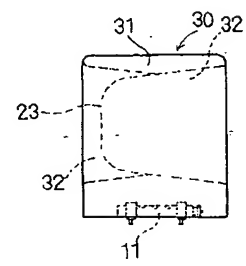
【図5】



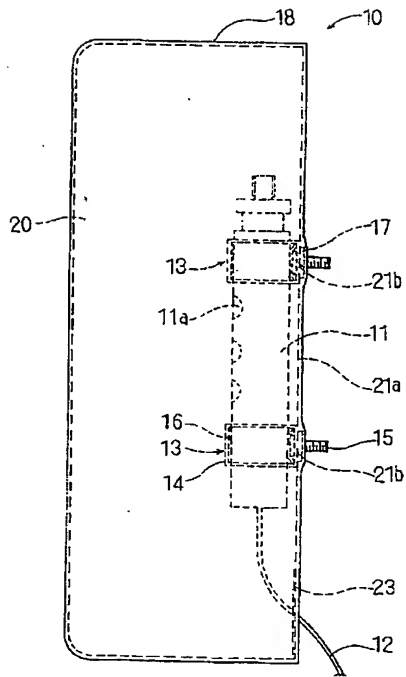
【図7】



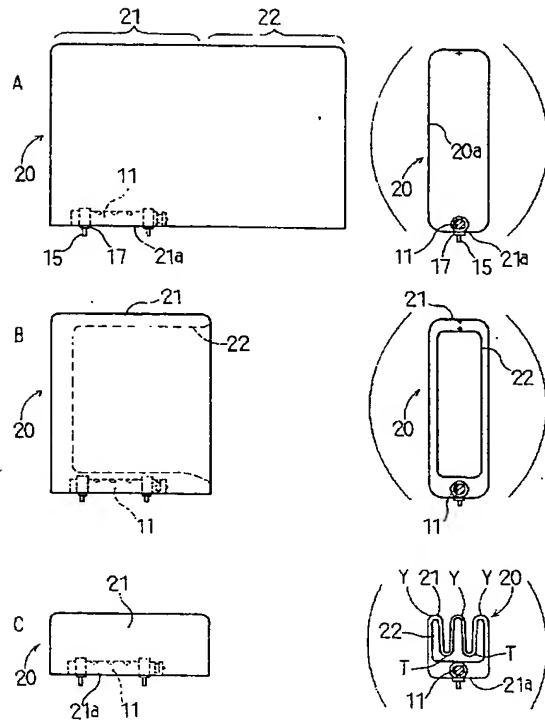
【図8】



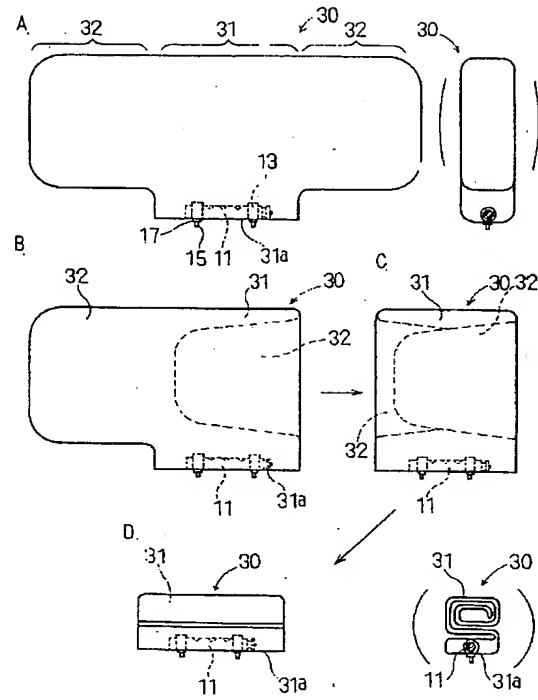
【図3】



【図4】



【図6】



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